Name _____ Date _____

Properties of Integer Exponents - Guided Lesson Explanation

Explanation # 1

Step 1) First we look to see what is being asked of us.

$$\frac{7^{-3}}{6^2}$$

Step 2) This is a base with a negative exponent. We can turn it into a positive exponent by using the following setup:

$$\frac{1}{7^3} \times \frac{1}{6^2}$$

$$\frac{1}{7^3} \times \frac{1}{6^2}$$

$$\frac{1}{343} \times \frac{1}{36}$$

$$\frac{1}{12348}$$

So the answer is $\frac{1}{12348}$

Explanation # 2

Step 1) First we look to see what is to be done.

Step 2) If the base is in $(a^x)^y$ form, two exponents should be multiplied

$(4^3)^2 =$

$4^{3x2} = 4^6$ (Simplify from there.)

$= 4{,}096$

Name _____ Date _____

Explanation # 3

Step 1) First we look to see what is being asked of us.

$4^3 \times 4^{-7}$

Step 2) When we have the same base to be multiplied with different exponents a^x X a^y , the exponents must be added.

$4^3 \times 4^{-7} = 4^{3 + (-7)}$

$= 4^{3-7}$

$= 4^{-4}$

When the exponent is negative, the base should be reciprocated.

$4^{-4} = \frac{1}{4^4}$

$= \frac{1}{256}$

So the answer is $\frac{1}{256}$